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INFORMATION ON GAS-INDUSTRY CONFERENCES

IN THE USSR

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## FOREWORD

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## INFORMATION ON GAS-INDUSTRY CONFERENCES IN THE USSR

Following are the translations of two articles published in 'Gazovaya Promyshlennost' (Gas Industry), Vol 5, No 11, Moscow, November 1960, pages 50-51 and 52 respectively.

### SCIENTIFIC-TECHNICAL CONFERENCE ON THE RATIONAL UTILIZATION OF NATURAL GAS IN INDUSTRIAL FURNACES AND DRIERS

By M. M. Efros

(pages 50-51)

A conference on the AS USSR project "Combustible Gases", organized by the Scientific-Technical Society of Power Industry and the Scientific Council, was held in Leningrad, 27 June - 2 July 1960, with the Leningrad House of Scientific-Technical Propaganda participating.

About 400 persons attended, representing 50 cities, 17 Sovnarkhozes, 130 industrial organizations, 64 institutes, 122 planning organizations, 48 producing organizations, and others.

A paper on "An Analysis of the Experience in Converting Industrial Furnaces and Driers to Natural and Mixed Gas" was read by Candidate of Technical Sciences M. M. Efros (All-Union Scientific Research Institute of Fuel -- VNITT).

It presented basic criteria for the selection of the type of burners, with emphasis on their relation to the design and dimensions of furnaces.

Papers by Academician N. N. Dobrokhotoy and Candidate of Technical Science I. I. Karp (IIG [?] Academy of Sciences, Ukrainian SSR) on "Converting Open-hearth Furnaces to Unheated High-Calory Gas" explained two change-over methods: with a carburization of the jet by pulverized residual oil, and auto-carburization without adding liquid fuel. The latter does away with the necessity of maintaining stores of residual oil in sections; this considerably simplifies production and cuts costs.

Candidate of Technical Sciences V. P. Lazarev (Kuybyshev Industrial Institute), in his paper, "Plane Multi-Jet Injection Gas Burners," reported on interesting results of the performance study of a new gas burner designed by the Institute. This burner is simpler and more compact than the conventional diffusion injection models.

A paper on "Study of Burners and Their Classification" was read by Engineer Ye. S. Ramenskaya (VNIPI Teploproekt).

The report of Candidate Technical Sciences A. V. Makarovskiy (IIG AS, Ukrainian SSR) dealt with the broad application of radiant injection burners of the Shvank type (the so-called infra-red radiation burners).

Similarly positive results of the application of infra-red radiation in stucco drying were reported by Candidate of Technical Sciences A. M. Levin and Engineers T. A. Molchanov and G. M. Oksyuta (Gipronigaz).

A paper on "The Use of Natural Gas in Non-Oxidizing Heating of Metal" was read by Candidate of Technical Sciences A. Ye. Yerinov (IIG AS, Ukrainian SSR).

The same topic was treated by Engineer A. V. Skvortsov (Mosgipromez), who described a new design for a non-oxidizing annular furnace.

Prof I. M. Rafalovich (Gintsvetmet) reported on "Gas Converting of Smelting Furnaces and Fire-Kilns in Non-Ferrous Metallurgy."

The designing of an experience with the operation of natural gas furnaces in the glass industry were described in a paper by Prof D. B. Ginzburg (MKhTI).

Papers by Engineers S. Ye. Bark, V. M. Kuvshinnikov, and M. I. Skvortsova (ZIL Motor Vehicle Plant), "Raising the Performance of Gas Furnaces in Our Plant," described the extensive experience of converting their furnaces to gas and the introduction of new techniques.

The broad experience in the use of natural gas in the Gor'kiy Motor Vehicle Plant was described in a paper by B. M. Kosoburd.

Of considerable interest was the experience of the Khar'kov plant "Sickle and Hammer" and of Rostsel'mash in converting their electric furnaces to natural gas, as reported by Engineers A. Ya. Nemirovskiy ("Sickle and Hammer") and N. A. Kutsev (NIIMT). Converted from electricity to gas were various thermal furnaces of types N and PN and copper smelting electric furnaces of DMK-250 type.

Candidate of Technical Sciences S. A. Blokh (IIG AS Ukrainian SSR) reported on radiant heat drying of porcelain, which is considerably more effective than convection heat drying.

A paper by Engineer V. V. Kovalenko (IIG AS, Ukrainian SSR) communicated the results of a study of metal panels in gas-operated infra-red heat driers working on propane-butane, generated, and natural gas.

The utilization of natural gas in drying units of cement plants was described by V. A. Shimel'fenig, I. A. Steshin, and Ye. K. Antropov (Gipronigaz).

Candidate of Technical Science A. U. Pugovkin read a paper on "The Experience with Automatized Vertical Furnaces in their Firing with Natural Gas," where he described the operation of a newly designed method of gas recirculation by utilizing heat-stream energy.

A survey of the current methods of cast iron smelting with natural gas was made by Prof L. M. Marienbach.

Docent B. A. Noskov and Assistant I. N. Den'gin (Khar'kov Polytechnical Institute) reported on "The Introduction of Natural Gas to Cast-Iron Smelting."

Engineer N. G. Eykhe (VNIIT) reviewed the performance of the Baku blast furnaces, which are on natural gas.

A report on automatization of burning and regulation of thermal conditions was made by Engineer A. Ye. Podgayetskiy (Lenpromenergogaz).

A project on standard instructions for starting and operating industrial furnaces on gas fuel was presented by Engineer A. A. Nechayev (VNIIT), who set forth the principles of their safe operation.

An interesting communication on the conversion for natural gas of the Il'ich Metallurgical Plant at Zhdanov was made by Engineer Prikhozhenko.

Engineer A. G. Borodin spoke on planning the conversion to natural gas for heating and thermal furnaces in metallurgical plants (Gipromex, Dnepropetrovsk). He cited some successful and unsuccessful instances of such conversions for various types of furnaces.

An especially lively topic of discussion was the selection of the proper burner for a furnace and the advantages and shortcomings of injection burners.

A number of papers and communications were devoted to the conversion of open-hearth furnaces to natural gas.

Many other papers dealt with the design and performance of gas and diesel-gas burners.

Also discussed was the topic of efficient methods for the diesel oil-spray in the carburating of gas in the conversion of open-hearth furnaces.

The conference adopted appropriate resolutions.

#### CONFERENCE ON THE DEVELOPMENT OF THE GAS INDUSTRY AND THE CO-ORDINATION OF SCIENTIFIC RESEARCH ON FUEL GASES

By S. F. Rozenfel'd

(page 52)

On 7-8 June 1960, the Academy of Sciences Uzbek SSR, the Gosplan Uzbek SSR, and the Uzbek Scientific-Technical Society of Power Engineers held a conference on production, economic, planning, and scientific organizations of Uzbekistan on the problems of the gas industry's development and the co-ordination of scientific research on fuel gases.

The gas conference, the first for the Republic, was confronted with urgent problems on combining the effort of all organizations in dealing with the conveying and usage of large volumes of gas, and working out recommendations for the improvement of scientific, planning, and production work on gas.

The conference was attended by 250 persons. Nine papers and 15 communications were read, mostly on planning.

Papers by Director of the Fuel Section of the Uzbek SSR Gosplan, Candidate of Technical Science P. K. Savchenko, and Director of the Economic Section Candidate of Technical Science B. A. Desyatchikov, dealt in detail on problems and prospects for the development of production and utilization of gas in the Republic, its transmission to the Urals and

Central Asian Republics, and economic efficiency in the distribution of gas consuming industries. These use gas as a source of power, as a raw material (the chemical industry), or as an efficient and economical fuel, etc.

The report of Academician N. V. Lavrov of the Academy of Science Uzbek SSR dealt with the problem of the most rapid development of scientific research on utilization of combustible gases.

An appropriate laboratory is being organized in the Academy of Sciences Uzbek SSR system. In the next few years, it will be re-organized as a special institute for fuel utilization.

Problems related to the exploration for and production of gas were considered in a report by Doctor of Geological and Mineral Sciences A. M. Akramkhodzhaev, Director of the Institute of Geology and the Development of Oil and Gas Fields, Academy of Sciences Uzbek SSR; and by Chief Geologist for the Uzbekneftegazrazvedka Trust L. G. Zhukovskiy, Laureate of the Lenin Prize. The prospects for further development of the gas industry are secure in the inexhaustible gas reserves of the Republic, estimated at about two trillion cubic meters.

Director of the Institute of Chemistry of Polymers, Academy of Sciences Uzbek SSR, KH. U. Usmanov, Corresponding Member of the Academy of Sciences Uzbek SSR, spoke on the prospects of the utilization of natural gas as a raw material for the polymer industry.

Also heard were papers "On the Development of Powder Metallurgy with Natural Gas," by Candidate of Technical Sciences Ya. V. Uspenskiy; "Gasification Prospects for the Cities and Settlements of Uzbekistan," by Director of the Uzgas Trust M. I. Smolin; and "Some Problems in the Geochemistry of Natural Gases," by Candidate of Chemical Sciences M. Ye. Naryzhnaya.

The problems of automation should be taken up simultaneously with those of gas transmission. This proposition was supported by all participants.

Director of the Andidargorgaz, F. G. Delov, reported on the successful use of asbestos-cement pipes.

Kh. A. Fridman, Chief Metallurgist of the "Krasnyy Dvigatel'" plant related his experience with the utilization of gas in the smelting of cast-iron in cupola furnaces.

Speakers from many scientific research, planning, and industrial organizations made many valuable suggestions on the organization of work connected with gasification of the Republic.

The Conference elected a staff of 40 for the Scientific-Technical Board for Combustible Gases, with Academician N. V. Lavrov of the Academy of Sciences Uzbek SSR as chairman.

The resolution adopted contained recommendations for the development and organization of work connected with gas utilization.